CLAIMS

1. A radiation therapy device, comprising

a source carrier arrangement carrying radioactive sources;

a collimator body comprising collimator passages for directing radiation emanating from said sources toward a substantially common focus, each collimator passage having an inlet for receiving said radiation;

c h a r a c t e r i z e d in that the source carrier arrangement is arranged to allow for a subset of said sources to be displaced relatively to said inlets, while the rest of said sources are fixed relatively to said inlets, thereby enabling a change of spatial dose distribution surrounding said focus.

2. The radiation therapy device as claimed in claim 1, wherein said source carrier arrangement comprises at least two segments, each segment carrying a subset of said sources and being individually displaceable.

3. The radiation therapy device as claimed in claim 2, wherein each segment is displaceable along the envelope surface of the collimator body.

4. The radiation therapy device as claimed in any one of claims 1-3, wherein each subset comprises at least one row of sources which are jointly placeable in register with collimator passage inlets aligned in a corresponding row, and which are jointly removable from said inlets, by displacement of a segment.

5. The radiation therapy device as claimed in claim 4, wherein said collimator body comprises several parallel rows of collimator passage inlets, at least one of said rows being associated with collimator passages that direct toward said focus radiation beams of a

different cross-section than radiation beams directed by collimator passages associated with the other rows.

6. The radiation therapy device as claimed in claim 5 and claim 2, wherein each segment is displaceable in a direction substantially perpendicular to and intersecting said rows of collimator passage inlets.

7. The radiation therapy device as claimed in claim 6, wherein said collimator body comprises:

a first set of rows of collimator passage inlets associated with collimator passages that provide radiation beams of a first cross-section;

a second set of rows of collimator passage inlets associated with collimator passages that provide radiation beams of a second cross-section; and preferably

at least a third set of rows of collimator passage inlets associated with collimator passages that provide radiation beams of a third cross-section;

wherein any row from one of said sets has, as its closest neighbour, a row from at least one of the other sets.

8. The radiation therapy device as claimed in claim 7, wherein said subset comprises a plurality of rows of sources which are arranged to be simultaneously placeable in register with collimator passage inlets from one of said sets, said plurality of rows of sources being simultaneously displaceable so that the sources of at least one of said rows of sources avoid being in register with collimator passage inlets.

9. The radiation therapy device as claimed in claim 2 or any one of claims 3-8 in combination with claim 2, wherein each segment is linearly displaceable relatively to the collimator body so as to cause the positions of said subset of sources to be linearly displaced

relatively to the positions of at least a subset of collimator passage inlets.

10. The radiation therapy device as claimed in any one of claims 1-9, wherein each one of said source carrier arrangement and said collimator body has a cross-section of at least an arc of a circle, preferably an entire circle, said sources and said collimator passage inlets being distributed along said arc of a circle, wherein said subset of collimator passage inlets and said subset of sources are linearly displaceable relatively to each other in a direction substantially perpendicular to said cross-section.

11. The radiation therapy device as claimed in any one of claims 1-10, wherein, in a Leksell x-,y-,z-coordinate system, said subset of collimator passage inlets and said subset of sources are linearly displaceable relatively to each other essentially in parallel to the z-axis.

12. The radiation therapy device as claimed in any one of claims 1-10, wherein at least a portion of said source carrier arrangement has an envelope surface shaped substantially like a frustum of a cone.

13. The radiation therapy device as claimed in claim 12, wherein, in a Leksell x-,y-,z-coordinate system, said subset of sources are linearly displaceable at an angle of 0-45°, such as 5-25°, preferably 10-15° to the z-axis.

14. The radiation therapy device as claimed in claim 2 or any one of claims 3-13 in combination with claim 2, wherein each segment comprises or is connected to a respective actuator, preferably comprising an arm, for controlling the displacement of the segment, wherein the

direction of displacement is preferably along the longitudinal axis of the actuator.

15. The radiation therapy device as claimed in claim 2 or any one of claims 3-8 in combination with claim 2, wherein each segment is displaceable along a curvature, such as along an arc of a circle.

16. The radiation therapy device as claimed in claim 15, wherein the collimator body is of substantially hemispherical shape with an annular base, each segment being displaceable in a rotary motion in relation to an axis extending along the diameter of the annular base.

17. The radiation therapy device as claimed in claim 15, wherein the collimator body is of substantially hemispherical shape with an annular base, each segment being displaceable in a rotary motion in relation to an axis extending from the center of the annular base to the crest of the hemisphere.

18. The radiation therapy device as claimed in claim 15, wherein the collimator body has a cross-section of at least an arc of a circle, preferably an entire circle, said sources and said collimator passage inlets being distributed along said arc of a circle, wherein each segment is displaceable along said arc of a circle or circumference of the circle.

19. The radiation therapy device as claimed in claim 2 or any one of claims 15 - 18, wherein each segment is connected to at least one shaft, such as a crankshaft, the segment being displaceable by rotating the shaft.

20. A method of changing the spatial dose distribution surrounding a focus toward which collimator passages direct radiation emanating from radioactive

sources carried by a source carrier arrangement of a radiation therapy device, each collimator passage having an inlet for receiving said radiation,
c h a r a c t e r i z e d by displacing a subset of said sources relatively to said collimator passage inlets, while keeping the rest of the sources fixed relatively to said collimator passage inlets.

21. The method as claimed in claim 20, comprising displacing a first segment of the source carrier arrangement, while keeping at least another segment of the source carrier arrangement fixed, each segment carrying a subset of said sources.

22. The method as claimed in claim 21, comprising displacing said first segment along the envelope surface of the collimator body.

23. The method as claimed in claim 21 or 22, comprising displacing said first segment so that the sources are moved from a position in which they are in register with collimator passage inlets to a position in which they are not in register with collimator passage inlets.

24. The method as claimed in claim 21 or 22, comprising displacing said first segment so that the sources are moved from a position in which they are in register with inlets to collimator passages of a first size to a position in which they are in register with inlets to collimator passages of a second size.

25. The method as claimed in any one of claims 21 24, comprising linearly displacing at least said first segment of said source carrier arrangement relatively to a collimator body having said collimator passages, thereby causing the positions of said subset of sources

to be displaced relatively to at least a subset of collimator passage inlets.

26. The method as claimed in any one of claims 21 - 25, comprising displacing said first segment essentially in parallel to the z-axis in a Leksell x-,y-,z-coordinate system.

27. The method as claimed in any one of claims 20 - 25, comprising displacing said first segment in a direction having an angle of 0-45°, such as 5-25°, preferably 10-15°,relatively to the z-axis in a Leksell x-,y-,z-coordinate system.

28. The method as claimed in any one of claims 20 - 24, comprising displacing said first segment along a curvature, such as along an arc of a circle.